APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/067,463	02/04/2002	Vahid Orboubadian	YMEDIA.009A	6384

28112   7590   07/26/2007

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ART UNIT	PAPER NUMBER
2622	

MAIL DATE	DELIVERY MODE
07/26/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
	10/067,463	ORBOUBADIAN, VAHID
Office Action Summary	Examiner	Art Unit	
	Kelly L. Jerabek	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>07 May 2007</u>.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-16 and 26</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-16 and 26</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>04 February 2002</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 5/7/2007 have been fully considered but they are not persuasive.

Response to Remarks:

Applicant's arguments regarding amended claim 1 (Amendment page 8) state that the Narayanaswami reference neither discloses "receiving information on a first camera characteristic suitable to enhance image reproduction", nor "receiving information on a first static camera characteristic suitable to identify a camera that is the source of the image" as the claimed invention does in claim 1. The Examiner acknowledges that the camera characteristics disclosed Narayanaswami reference do not specifically enhance image reproduction nor do they identify a camera that is the source of the image. However, the Inoue reference provides the teaching of these limitations. Inoue discloses a digital camera capable of storing additional image information together with sensed image information. Inoue states that in order to print an image a printer (2) requests the digital camera (1) to transfer image information and image additional information (11) corresponding to that image. Inoue further states that a processing selector (12) selects appropriate print processing based on the

obtained image additional information (11) (figs. 1-2; col. 4, lines 35-65). In addition, Inoue states that the image additional information (11) used for image processing (used to enhance image reproduction) may include digital input device unique information such as camera type information (13-16) (static camera characteristics) (col. 4, line 66-col. 5, line 22). Thus, it can be seen that Inoue teaches receiving information on a first static camera characteristic suitable to enhance image reproduction (image additional information 11 is used to select an appropriate one of a plurality of kinds of printing control information) and receiving information on a first static camera characteristic suitable to identify a camera that is the source of the image (the image additional information 11 used for image processing may include digital input device unique information such as camera type information 13-16). Therefore, it can be seen that the combination of the Narayanaswami and Inoue references discloses all of the limitations of amended claim 1.

Applicant's arguments regarding amended claim 1 (Amendment pages 9-10) state that the Inoue reference does not disclose "receiving information on a first static camera characteristic suitable to identify a camera that is the source of the image". Applicant's arguments further state that Inoue discloses in figure 2 that the digital input device unique information includes camera type information, but no information suitable to identify a specific camera that is the source of the image taken, e.g. a fabrication number or other properties which are unique to a single camera. The Examiner respectfully disagrees. First, it is noted that the

claim does not mention a fabrication number or any other properties which are

unique to a single camera therefore the argument regarding a fabrication number

and other properties is moot. Inoue discloses a digital camera capable of storing

additional image information together with sensed image information. Inoue

states that in order to print an image a printer (2) requests the digital camera (1)

to transfer image information and image additional information (11)

corresponding to that image. Inoue further states that a processing selector (12)

selects appropriate print processing based on the obtained image additional

information (11) (figs. 1-2; col. 4, lines 35-65). **In addition, Inoue states that**

the image additional information (11) used for image processing (used to

enhance image reproduction) may include digital input device unique

information such as camera type information (13-16) (static camera

characteristics) (col. 4, line 66-col. 5, line 22). Thus, it can be seen that

Inoue teaches receiving information on a first static camera characteristic

suitable to identify a camera that is the source of the image (the image

additional information 11 used for image processing may include digital

input device unique information such as camera type information 13-16).

Therefore, it can be seen that the combination of the Narayanaswami and Inoue

references discloses all of the limitations of amended claim 1.

Applicant's arguments regarding claim 1 (Amendment pages 10-11) state

that the combination of the invention of Narayanaswami, disclosing a method

automatically watermarking recorded parameters for providing digital image

verification, with the invention of Inoue, disclosing an image forming system, is

believed not to be obvious because it is known in the art that the amount of

information, which can be stored in a watermark is some orders of magnitudes

smaller than the amount of information which can be transferred by a direct link

as disclosed by Inoue. The Examiner respectfully disagrees. Narayanaswami

discloses a method of embedding camera information and image capture related

information in a digital form of an image, comprising: receiving information on

camera characteristics suitable to enhance image reproduction (parameters such

as camera location, image mode, etc.) (page 4, paragraph 43); receiving camera

setting information (focal length, focus distance, frame number, image quality,

flash status, light meter readings, etc.) related to a first captured digitized image

(page 3, paragraphs 34-35); generating an encryption key based at least in part

on the camera characteristics (page 5, paragraph 46); embedding a watermark in

said first captured digitized image, wherein the watermark contains at least a

portion of the information on the camera characteristics and at least a portion of

the camera setting information related to said first captured digitized image; and

encrypting the watermark using the encryption key (page 4, paragraph 42 - page

5, paragraph 48). **Additionally, the Narayanaswami reference states that it is**

well known to watermark and record parameters such as camera location,

camera velocity, image mode, image quality, compression, date, time,

exposure duration, aperture, light meter reading, flash status, lens focal

length, auto focus distance, photographer and voice annotation with each

image (page 4, paragraph 43). Narayanaswami further states that the

parameters listed are not illustrative of every parameter that may be watermarked and that one of ordinary skill in the art could envision additional parameters that may be recorded and utilized in accordance with the teachings of the invention. However, although the Narayanaswami reference discloses all of the above limitations it fails to specifically state that any of the camera characteristics capable of being watermarked are static camera characteristics suitable to enhance image reproduction or suitable to identify a camera that is the source of the image.

Inoue discloses a digital camera capable of storing additional image information together with sensed image information. Inoue states that in order to print an image a printer (2) requests the digital camera (1) to transfer image information and image additional information (11) corresponding to that image. Inoue further states that a processing selector (12) selects appropriate print processing based on the obtained image additional information (11) (figs. 1-2; col. 4, lines 35-65). In addition, Inoue states that the image additional information (11) used for image processing (used to enhance image reproduction) may include digital input device unique information such as camera type information (13-16) (static camera characteristics) (col. 4, line 66-col. 5, line 22). Thus, it can be seen that Inoue teaches receiving information on a first static camera characteristic suitable to enhance image reproduction (image additional information 11 is used to select an appropriate one of a plurality of kinds of printing control information) and receiving information on a first static camera characteristic suitable to identify a camera that is the source of the image

(the image additional information 11 used for image processing may include

digital input device unique information such as camera type information 13-16).

Therefore, it would have been obvious for one skilled in the art to have been

motivated to include image additional information such as camera type

information as disclosed by Inoue as one of the camera characteristics capable

of being watermarked as disclosed by Narayanaswami. Doing so would provide

a means for attaching information regarding static camera characteristics in order

to perform the most suitable printing control processing (Inoue: col. 4, lines 61-

65). The Examiner maintains that there is proper motivation to combine the

Narayanaswami and Inoue references and that the combination meets all of the

limitations of amended claim 1.

Applicant's arguments regarding claims 2-16 and 26 (Amendment pages

11-14) are substantially the same as the arguments regarding claim 1 above,

therefore the responses given above regarding claim 1 also apply to claims 2-16

and 26.

Applicant's arguments regarding claims 1-16 and 26 (Amendment pages

13-14) state that the systems and methods of claims 1-16 and 26 are believed to

be novel and patentable over the Narayanaswami and Inoue references because

there is not sufficient basis for concluding that the combination of the references

would have been obvious to one skilled in the art. The Examiner respectfully

disagrees. Motivation to combine the references was provided in the previous

office action and the combination of the references and motivation to combine is

repeated below.

Narayanaswami discloses a method of embedding camera information

and image capture related information in a digital form of an image, comprising:

receiving information on camera characteristics suitable to enhance image

reproduction (parameters such as camera location, image mode, etc.) (page 4,

paragraph 43); receiving camera setting information (focal length, focus distance,

frame number, image quality, flash status, light meter readings, etc.) related to a

first captured digitized image (page 3, paragraphs 34-35); generating an

encryption key based at least in part on the camera characteristics (page 5,

paragraph 46); embedding a watermark in said first captured digitized image,

wherein the watermark contains at least a portion of the information on the

camera characteristics and at least a portion of the camera setting information

related to said first captured digitized image; and encrypting the watermark using

the encryption key (page 4, paragraph 42 - page 5, paragraph 48). Additionally,

the Narayanaswami reference states that it is well known to watermark and

record parameters such as camera location, camera velocity, image mode,

image quality, compression, date, time, exposure duration, aperture, light meter

reading, flash status, lens focal length, auto focus distance, photographer and

voice annotation with each image (page 4, paragraph 43). Narayanaswami

further states that the parameters listed are not illustrative of every parameter

that may be watermarked and that one of ordinary skill in the art could envision

additional parameters that may be recorded and utilized in accordance with the teachings of the invention. However, although the Narayanaswami reference discloses all of the above limitations it fails to specifically state that any of the camera characteristics capable of being watermarked are static camera characteristics suitable to enhance image reproduction or suitable to identify a camera that is the source of the image.

Inoue discloses a digital camera capable of storing additional image information together with sensed image information. Inoue states that in order to print an image a printer (2) requests the digital camera (1) to transfer image information and image additional information (11) corresponding to that image. Inoue further states that a processing selector (12) selects appropriate print processing based on the obtained image additional information (11) (figs. 1-2; col. 4, lines 35-65). In addition, Inoue states that the image additional information (11) used for image processing (used to enhance image reproduction) may include digital input device unique information such as camera type information (13-16) (static camera characteristics) (col. 4, line 66-col. 5, line 22). Thus, it can be seen that Inoue teaches receiving information on a first static camera characteristic suitable to enhance image reproduction (image additional information 11 is used to select an appropriate one of a plurality of kinds of printing control information) and receiving information on a first static camera characteristic suitable to identify a camera that is the source of the image (the image additional information 11 used for image processing may include digital input device unique information such as camera type information 13-16).

Therefore, it would have been obvious for one skilled in the art to have been

motivated to include image additional information such as camera type

information as disclosed by Inoue as one of the camera characteristics capable

of being watermarked as disclosed by Narayanaswami. **Doing so would**

provide a means for attaching information regarding static camera

characteristics in order to perform the most suitable printing control

processing (Inoue: col. 4, lines 61-65).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for

all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described
> as set forth in section 102 of this title, if the differences between the subject matter sought to
> be patented and the prior art are such that the subject matter as a whole would have been
> obvious at the time the invention was made to a person having ordinary skill in the art to which
> said subject matter pertains. Patentability shall not be negatived by the manner in which the
> invention was made.

Claims 1-8, 10-16 and 26 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Narayanaswami et al. in view of Inoue et al. US

6,273,535.

Re claim 1, Narayanaswami discloses a method of embedding camera

information and image capture related information in a digital form of an image,

comprising: receiving information on camera characteristics suitable to enhance

image reproduction (parameters such as camera location, image mode, etc.)
(page 4, paragraph 43); receiving camera setting information (focal length, focus
distance, frame number, image quality, flash status, light meter readings, etc.)
related to a first captured digitized image (page 3, paragraphs 34-35); generating
an encryption key based at least in part on the camera characteristics (page 5,
paragraph 46); embedding a watermark in said first captured digitized image,
wherein the watermark contains at least a portion of the information on the
camera characteristics and at least a portion of the camera setting information
related to said first captured digitized image; and encrypting the watermark using
the encryption key (page 4, paragraph 42 - page 5, paragraph 48). Additionally,
the Narayanaswami reference states that it is well known to watermark and
record parameters such as camera location, camera velocity, image mode,
image quality, compression, date, time, exposure duration, aperture, light meter
reading, flash status, lens focal length, auto focus distance, photographer and
voice annotation with each image (page 4, paragraph 43). Narayanaswami
further states that the parameters listed are not illustrative of every parameter
that may be watermarked and that one of ordinary skill in the art could envision
additional parameters that may be recorded and utilized in accordance with the
teachings of the invention. However, although the Narayanaswami reference
discloses all of the above limitations it fails to specifically state that any of the
camera characteristics capable of being watermarked are static camera
characteristics suitable to enhance image reproduction or suitable to identify a
camera that is the source of the image.

Inoue discloses a digital camera capable of storing additional image information together with sensed image information. Inoue states that in order to print an image a printer (2) requests the digital camera (1) to transfer image information and image additional information (11) corresponding to that image. Inoue further states that a processing selector (12) selects appropriate print processing based on the obtained image additional information (11) (figs. 1-2; col. 4, lines 35-65). In addition, Inoue states that the image additional information (11) used for image processing (used to enhance image reproduction) may include digital input device unique information such as camera type information (13-16) (static camera characteristics) (col. 4, line 66-col. 5, line 22). Thus, it can be seen that Inoue teaches receiving information on a first static camera characteristic suitable to enhance image reproduction (image additional information 11 is used to select an appropriate one of a plurality of kinds of printing control information) and receiving information on a first static camera characteristic suitable to identify a camera that is the source of the image (the image additional information 11 used for image processing may include digital input device unique information such as camera type information 13-16). Therefore, it would have been obvious for one skilled in the art to have been motivated to include image additional information such as camera type information as disclosed by Inoue as one of the camera characteristics capable of being watermarked as disclosed by Narayanaswami. Doing so would provide a means for attaching information regarding static camera characteristics in order

to perform the most suitable printing control processing (Inoue: col. 4, lines 61-65).

Re claims 2-4, Narayanaswami discloses all of the limitations of claim 1 above. Additionally, Narayanaswami states that a first static camera characteristic (image sensor shape) (camera capable of being in portrait or landscape mode indicates that the image sensor of the camera is rectangular in shape) as well as many other parameters may be embedded as a watermark in a digital image (page 3, paragraph 35; page 4, paragraph 43). However, Narayanaswami does not specifically state that camera parameters such as camera image sensor bad pixel characteristics, sensor current values, and image sensor sensitivities are embedded as a watermark in a digital image. The Examiner takes **Official Notice** that camera parameters such as camera image sensor bad pixel characteristics, sensor current values, and image sensor sensitivities were well known in the art at the time the invention was made. Therefore, it would have been obvious for one skilled in the art to have been motivated to record and watermark camera parameters such as camera image sensor bad pixel characteristics, sensor current values, and image sensor sensitivities into a digital image in addition to the parameters disclosed by Narayanaswami that are watermarked into a digital image. Doing so would provide a means for accessing the camera parameters present when the image was taken when accessing the image itself.

Re claim 5, Narayanaswami states that the camera setting information includes information related to the flash intensity used to capture the digitized image (page 3, paragraph 34).

Re claim 6, Narayanaswami states that information related to the ambient light present when the image was captured is included in the watermark (page 3, paragraph 34).

Re claim 7, Narayanaswami states that a number of dynamically measured camera characteristics are included in the watermark (page 3, paragraph 34).

Re claim 8, Narayanaswami discloses a digital camera system, comprising: an imager (page 3, paragraph 32); camera characteristics suitable to enhance image reproduction (parameters such as camera location, image mode, etc.) (page 4, paragraph 43); a first variable camera setting; (focal length, focus distance, frame number, image quality, flash status, light meter readings, etc.) (page 3, paragraphs 34-35); a watermark generator used to embed in the form of a watermark at least one of said camera characteristics and said first variable camera setting information in an image captured by the camera; and a key generator configured to generate an encryption key used to encrypt a watermark (page 4, paragraph 42 - page 5, paragraph 48). Narayanaswami further states that the parameters listed are not illustrative of every parameter that may be

watermarked and that one of ordinary skill in the art could envision additional

parameters that may be recorded and utilized in accordance with the teachings

of the invention. However, although the Narayanaswami reference discloses all

of the above limitations it fails to specifically state that any of the camera

characteristics capable of being watermarked are static camera characteristics

suitable to enhance image reproduction or suitable to identify a camera that is

the source of the image.

Inoue discloses a digital camera capable of storing additional image

information together with sensed image information. Inoue states that in order to

print an image a printer (2) requests the digital camera (1) to transfer image

information and image additional information (11) corresponding to that image.

Inoue further states that a processing selector (12) selects appropriate print

processing based on the obtained image additional information (11) (figs. 1-2;

col. 4, lines 35-65). In addition, Inoue states that the image additional

information (11) used for image processing (used to enhance image

reproduction) may include digital input device unique information such as camera

type information (13-16) (static camera characteristics) (col. 4, line 66-col. 5, line

22). Thus, it can be seen that Inoue teaches receiving information on a first

static camera characteristic suitable to enhance image reproduction (image

additional information 11 is used to select an appropriate one of a plurality of

kinds of printing control information) and receiving information on a first static

camera characteristic suitable to identify a camera that is the source of the image

(the image additional information 11 used for image processing may include

digital input device unique information such as camera type information 13-16).

Therefore, it would have been obvious for one skilled in the art to have been

motivated to include image additional information such as camera type

information as disclosed by Inoue as one of the camera characteristics capable

of being watermarked as disclosed by Narayanaswami. Doing so would provide

a means for attaching information regarding static camera characteristics in order

to perform the most suitable printing control processing (Inoue: col. 4, lines 61-

65).

Re claim 10, the watermark disclosed by Narayanaswami is visually

imperceptible (page 5, paragraph 45).

Re claims 11-13, Narayanaswami states that the variable camera settings

to be watermarked consist of shutter speed, aperture setting, flash setting as well

as other camera settings (page 4, paragraph 43).

Re claims 14-16, Narayanaswami discloses all of the limitations of claim 8

above. Additionally, Narayanaswami states that a first static camera

characteristic (image sensor shape) (camera capable of being in portrait or

landscape mode indicates that the image sensor of the camera is rectangular in

shape) as well as many other parameters may be embedded as a watermark in a

digital image (page 3, paragraph 35; page 4, paragraph 43). However,

Narayanaswami does not specifically state that camera parameters such as

imager current, defective pixels associate with the imager, and gamma information are embedded as a watermark in a digital image. The Examiner takes **Official Notice** that camera parameters such as imager current, defective pixels associate with the imager, and gamma information were well known in the art at the time the invention was made. Therefore, it would have been obvious for one skilled in the art to have been motivated to record and watermark camera parameters such as imager current, defective pixels associate with the imager, and gamma information into a digital image in addition to the parameters disclosed by Narayanaswami that are watermarked into a digital image. Doing so would provide a means for accessing the camera parameters present when the image was taken when accessing the image itself.

Re claim 26, see claim 1. Narayanaswami also states that the digitized image and the data set may be transmitted (page 4, paragraph 41).

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Narayanaswami et al. in view of Inoue and further in view of Isnardi et al. US 6,037,984.

Re claim 9, the combination of the Narayanaswami and Inoue references discloses all of the limitations of claim 8 above. However, Narayanaswami states that the stamping/watermarking information is invisible.

Isnardi states that digital watermarks are well known in the art. Isnardi states that although watermarks are generally invisible, in some application, it is desirable to produce a visible watermark that can be removed by an authorized image decoder (col. 1, lines 11-25). Therefore, it would have been obvious for one skilled in the art to have been motivated to include a visually perceptible watermark as disclosed by Isnardi in the camera capable of watermarking camera parameters into digital image data as disclosed by Narayanaswami. Doing so would provide a means for visibly displaying a watermark on an image and only allowing it to be removed by an authorized image decoder (Isnardi: col. 1, lines 21-25).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Sato (US 6,650,365) discloses an image correction information recording device. The information regarding storing image correction data along with a captured image is relevant information.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.**

See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contacts

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kelly L. Jerabek whose telephone number is **(571) 272-7312**. The examiner can normally be reached on Monday - Friday (8:00 AM - 5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lin Ye can be reached on **(571) 272-7372**. The fax phone number for submitting all Official communications is **(571) 273-7300**. The fax phone number for submitting informal communications such as drafts,

proposed amendments, etc., may be faxed directly to the Examiner at **(571) 273-7312.**

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KLJ

LIN YE
SPE. ART UNIT 2622